Athletic Participation Among Students AND its Correlation to Increased Outcomes in Academic Performance

Dr. Benjamin C. Anderson

IASP Assistant Principals Conference

November 16, 2026

Ben's Educational Journey



- Indiana University South Bend
  - Bachelor's Degree
  - Elementary Education
  - May 2010
- Ball State University
  - Master's Degree
  - Educational Administration & Supervision
    - Principal Licensure
  - December 2013
- Indiana State University
  - Educational Specialist Degree
  - School Administration
    - Superintendent Licensure
  - August 2017
- Indiana State University
  - Doctor of Philosophy
  - Educational Administration
  - August 2025

Ben's Work History



- LaPorte Community School Corporation
  - Elementary Teacher
  - Middle School Science Teacher
  - 2010-2014

- South Central Community School Corporation (Union Mills)
  - Assistant Principal / AD
    - 2014-2015
  - Elementary Principal
    - 2015-2018
  - JH / HS Principal
    - 2018-2022
  - Superintendent
    - 2022-present

Ben's Dissertation Journey



- Indiana Principal Leadership Institute
  - 2015-16 & 2016-17 school years
  - 12 of 30 credit hours toward Ed.S.
- Finish Ed.S.
  - Summer of 2017
  - 1 year until next Ph.D. cohort
- Started Ph.D. regional cohort out of Indianapolis in 2018
  - Finished classes spring of 2020, at the beginning of Covid
  - Took the GRE - Graduate Records Exam
  - Preliminary Exam - oral arguments
- Bumps in the road…
  - Covid
  - High School Principal
  - Varsity Girls Basketball Coach
- Defended Dissertation in August of 2025
  - Perseverance!

Let’s jump into my study!



SHOUT OUT! to my Dissertation Committee



- Dr. Brad Balch -- Committee Chair
  - Dean
    - Interim Vice President & Provost
  - Professor of Educational Leadership
  - *Retired Superintendent*
- Dr. Terry McDaniel
  - Advisor
  - Professor of Educational Leadership
  - *Retired Superintendent*
- Dr. Sandra Wood
  - Superintendent, LaPorte Community Schools
  - Ph.D. from Indiana State University
- Dr. Theodore Stevens
  - Superintendent, School City of Mishawaka
  - Ph.D. from Purdue University

- BIG Thank You --- Dr. Mike Langevin
  - Mentor
  - EES Innovation

Purpose of the Study

Study Purpose: This quantitative study was performed to determine whether participation in athletics leads to improved academic performance among high school students.

Academic Measures: Academic performance was evaluated using standardized test scores, specifically the PSAT and SAT.

Demographic Focus: The research analyzed student data by gender, ethnicity, and grade level to identify performance trends within those subgroups.

Attendance and Performance: The study explored whether student attendance played a role in the academic outcomes of athletic participants.

Geographic Scope: The focus was specifically on rural high schools across the northern part of the state of Indiana.

Practical Application: Findings will help educators and school leaders better understand the academic value of athletic participation, potentially guiding student decision-making around extracurricular involvement.

Significance of the Study

Academic Impact: The study examined how athletic participation influences academic outcomes, specifically PSAT and SAT performance.

Attendance Correlation: It also explored whether involvement in athletics is linked to improved school attendance, potentially motivating students to come to school.

Administrative Relevance: School leaders can use this data to better document student progress toward graduation and understand the broader benefits of athletics.

Legislative Insight: The study provides Indiana legislators with data on student athletic participation, which could inform policy decisions affecting education and extracurricular programming.

Concerns Around Consolidation: It highlights potential negative effects of school consolidation—such as reduced athletic opportunities—that could impact student participation and academic performance statewide.

Chapter 2 Literature Review

The most tedious part of the dissertation process...

The Changing Landscape of Indiana Education

The Role of Extracurricular Activities in Schools

Extracurriculars' Role in Student Learning Outcomes

The Benefits of Extracurricular Activities

Chapter 2 Literature Review

The Changing Landscape of Indiana Education

Redesign Motivations: A disconnect between student goals and actual outcomes, low postsecondary enrollment, and a lack of workforce skills among graduates have driven efforts to redesign high school education and modernize diploma expectations (SBOE, 2024).

New Diploma Framework: Indiana's single diploma model introduces "readiness seals" to reflect employment, enrollment, or enlistment goals and emphasizes flexibility, real-world skills, and alignment with student interests (SBOE, 2024).

Implementation Timeline: The new diploma rule will be gradually phased in from 2024–2025 to 2028–2029, with professional development, stakeholder engagement, and early pilot programs supporting a smooth statewide transition (SBOE, 2024).

Chapter 2 Literature Review

The Role of Extracurricular Activities in Schools

Academic, social, and emotional development: Extracurricular activities support student growth by improving achievement, building interpersonal skills, reducing delinquency, and boosting self-esteem (McNeal, 1999; Denault & Guay, 2017).

Attendance and academic performance: Students involved in extracurriculars, particularly fine arts, tend to have lower absenteeism and higher GPAs compared to their peers who are not involved (Taetle, 1999).

Access to enrichment opportunities: Both athletic and non-athletic extracurriculars provide structure and engagement, especially for students with limited supervision after school (Fredricks & Simpkins, 2012; IHSAA, 2019).

Chapter 2 Literature Review

Extracurriculars' Role in Student Learning Outcomes

Hughes et al. (2016): Found a strong connection between extracurricular participation and academic achievement, with different activities (e.g., sports, clubs) offering benefits through unique mechanisms like teamwork or academic engagement.

Fredricks (2012): Conducted a longitudinal study showing positive academic effects from extracurricular involvement, though she also warned against overscheduling, which could lead to negative outcomes.

Shulruf (2010): Analyzed decades of research and confirmed a positive correlation between extracurricular activity participation and academic achievement, particularly through involvement in athletics.

Silliker and Quirk (1997): Focused on soccer players and found that extracurricular athletic involvement, especially during the active season, was associated with improved academic performance, particularly among female students.

Chapter 2 Literature Review

The Benefits of Extracurricular Activities

Extracurriculars enhance student motivation and growth: Activities offer a break from academics, support social-emotional development, and contribute to academic success and professional preparation (Lawhorn, 2008).

At-risk students benefit significantly: Structured extracurricular programs provide belonging, motivation, and a protective factor against disengagement and dropping out (Holloway, 1999).

Extracurriculars support leadership development: Opportunities like team captain help students develop confidence and management skills that translate into future leadership roles (Lawhorn, 2008).

Overscheduling can have negative effects: While extracurricular participation is generally beneficial, Fredricks (2012) noted that students heavily involved in multiple activities may experience stress or declining academic performance if balance is not maintained.

Research Questions

Null Hypotheses

Methods of Analysis

Research Question #1:

What are the current academic and engagement factors of Indiana high school students that participate in athletics?

Null Hypothesis:

N/A

Method of Analysis:

- Descriptive in nature
- Frequencies, percentages, means, and standard deviations to describe the dependent variables' composite score and types of participants.
- Descriptive data will allow for identification of possible trends in data.

Descriptive Statistics

- **20** rural high schools in northern Indiana were invited to participate.

- **1,434 Student Athletes**
  - 9th grade - 399 (27.8%)
  - 10th grade - 335 (23.4%)
  - 11th grade - 369 (25.7%)
  - 12th grade - 331 (23.1%)
- **Male vs. Female**
  - Male - 724 (50.5%)
    - 9th grade - 208 (28.7%)
    - 10th grade - 167 (23.1%)
    - 11th grade - 180 (24.9%)
    - 12th grade - 169 (23.3%)
  - Female - 710 (49.5%)
    - 9th grade - 191 (26.9%)
    - 10th grade - 168 (23.7%)
    - 11th grade - 189 (26.6%)
    - 12th grade - 162 (22.8%)

- **Ethnicity**
  - White - 1,304 (90.9%)
    - 9th grade - 366 (28.1%)
    - 10th grade - 311 (23.8%)
    - 11th grade - 330 (25.3%)
    - 12th grade - 291 (22.8%)
      - Male - 654 (50.2%)
      - Female - 650 (49.8%)
  - Non-white - 130 (9.1%)
    - 9th grade - 33 (25.4%)
    - 10th grade - 24 (18.5%)
    - 11th grade - 39 (30.0%)
    - 12th grade - 34 (26.2%)
      - Male - 70 (53.8%)
      - Female - 60 (46.2%)
  - *Hispanic - 85 (5.9%)*
  - *Black - 16 (1.1%)*
  - *Asian - 11 (0.8%)*
  - *Bi-racial - 18 (1.3%)*

Descriptive Statistics

- **PSAT**
  - 963 students took PSAT
    - Male - 465
    - Female - 498
  - Range of scores was 470 to 1500
  - Mean = 954.45
  - *SD* = 155.74
- **SAT**
  - 687 students took SAT
    - Male - 340
    - Female - 347
  - Range of scores was 400 to 1510
  - Mean = 1007.07
  - *SD* = 160.97

- **Attendance**
  - All 1,434 had attendance reported
    - Male - 724
    - Female - 710
  - Range of absences was 0 to 65.5
  - Mean = 7.52 days absent
  - *SD* = 6.90

Research Questions

Null Hypotheses

Methods of Analysis

Research Question #2:

Is there a statistically significant difference based on gender on the academic performance of Indiana high school students that participate in athletics?

Null Hypothesis:

There is not a statistically significant difference based on gender on the academic performance of Indiana high school students that participate in athletics.

Method of Analysis:

- Test whether there is a significant difference on PSAT or SAT scores for male vs. female athletes.
- Use an independent samples *t*-test (only 2 levels)
- No post hoc is required.

Inferential Statistics
Analysis & Findings for Research Question #2

- **Gender did NOT have a significant effect on the dependent variable score for PSAT or SAT.**
  - The PSAT was non-significant between males (*M* = 956.46, *SD* = 173.85) and females (*M* = 952.62, *SD* = 136.82).
  - The SAT was also non-significant among males (*M* = 1007.46, *SD* = 172.45) and females (*M* = 1006.68, *SD* = 149.12).
  - With no significant findings, the first null was retained.

Research Questions

Null Hypotheses

Methods of Analysis

Research Question #3:

Is there a statistically significant difference based on ethnicity on the academic performance of Indiana high school students that participate in athletics?

Null Hypothesis:

There is not a statistically significant difference based on ethnicity on the academic performance of Indiana high school students that participate in athletics.

Method of Analysis:

- Test whether there is a significant difference on PSAT or SAT scores for white, black, Hispanic, Asian, or bi-racial athletes.
- Use a One-Way ANOVA (3 or more levels)
- Post hoc is required to determine where a significant difference lies, if found.

Inferential Statistics
Analysis & Findings for Research Question #3

- **Ethnicity did NOT not have a significant difference on the independent variable score for PSAT.**
  - The PSAT was non-significant between:
    - White (*M* = 956.93, *SD* = 157.47)
    - Black (*M* = 848.00, *SD* = 192.46)
    - Hispanic (*M* = 929.66, *SD* = 126.91)
    - Asian (*M* = 987.00, *SD* = 148.55)
    - Bi-racial (*M* = 959.29, *SD* = 108.73)

Inferential Statistics
Analysis & Findings for Research Question #3

- **Ethnicity DID have a significant difference on the independent variable for SAT!**
  - The white subgroup (*M* = 1011.78, *SD* = 160.86) was found to have outperformed the black subgroup (*M* = 761.67, *SD* = 258.33) on SAT. The significant difference is estimated to be between 71.71 and 428.51 points with a 95% confidence level.
  - The Hispanic subgroup (*M* = 966.04, *SD* = 121.42) outperformed the black subgroup on SAT. The significant difference is estimated to be between 16.07 and 392.68 points with a 95% confidence level.
  - The Asian subgroup (*M* = 1103.75, *SD* = 176.31) outperformed the black subgroup on SAT. The significant difference is estimated to be between 107.22 and 576.94 points with a 95% confidence level.
  - The bi-racial subgroup (*M* = 987.27, *SD* = 116.37) outperformed the black subgroup on SAT. The significant difference is estimated to be between 4.90 and 446.31 points with a 95% confidence level.
  - All other comparisons were not significant. Due to the significant findings for the SAT, the second null has been rejected.

Research Questions

Null Hypotheses

Methods of Analysis

Research Question #4:

Is there a statistically significant difference based on grade level on the academic performance of Indiana high school students that participate in athletics?

Null Hypothesis:

There is not a statistically significant difference based on grade level on the academic performance of Indiana high school students that participate in athletics.

Method of Analysis:

- Test whether there is a significant difference on PSAT or SAT scores for grade 9, 10, 11, and 12 athletes.
- Use a One-Way ANOVA (3 or more levels)
- Post hoc is required to determine where a significant difference lies, if found.

Inferential Statistics
Analysis & Findings for Research Question #4

- **Grade level DID have a significant difference on the independent variable for PSAT!**
  - The 12th grade subgroup (*M* = 973.06, *SD* = 161.46) was found to have outperformed the 9th grade subgroup (*M* = 923.30, *SD* = 136.16) on PSAT. The significant difference was estimated to be between 2.90 and 96.61 points with a 95% confidence level.
  - The 12th grade subgroup (*M* = 973.06, *SD* = 161.46) also outperformed the 10th grade subgroup (*M* = 933.44, *SD* = 153.70) on PSAT. The significant difference was estimated between 5.26 and 73.97 points with a 95% confidence level.

Inferential Statistics
Analysis & Findings for Research Question #4

- **Grade level did NOT have a significant difference on the independent variable score for SAT.**
  - The SAT was non-significant between 12th grade (*M* = 1008.90, *SD* = 165.90) and 11th grade (*M* = 1005.30, *SD* = 156.56).
  - There was not enough data for 9th and 10th grade students who took the SAT; therefore, that may be the reason no significance was found.
  - With a significant finding for PSAT, the third null was rejected.

Research Questions

Null Hypotheses

Methods of Analysis

Research Question #5:

Do the attendance levels explain a statistically significant amount of variance within the academic performance of Indiana high school students that participate in athletics?

Null Hypothesis:

The attendance levels do not explain a statistically significant amount of variance within the academic performance of Indiana high school students that participate in athletics.

Method of Analysis:

- Test whether the attendance levels of athletes predicts their academic achievement on PSAT or SAT.
- Use a simple linear regression for PSAT
- Use a simple linear regression for SAT
- No post hoc is required.

Inferential Statistics
Analysis & Findings for Research Question #5

- **Attendance IS a significant predictor of PSAT scores for students who participate in extra-curricular activities!**
  - For each day an athlete misses during a school year, their PSAT score is expected to drop by 2.87 points. The Unstandardized Partial Regression Coefficient indicates that the PSAT score is predicted to decrease by 2.87 points for each day a student misses school.
- **Attendance IS also a significant predictor of SAT scores for students who participate in extra-curricular activities!**
  - For each day an athlete misses during a school year, their SAT score is expected to drop by 4.50 points. The Unstandardized Partial Regression Coefficient indicates that the SAT score is predicted to decrease by 4.50 points for each day a student misses school.

Inferential Statistics

Analysis & Findings for Research Question #5

- **LOSE 2.87 points off PSAT score for each day of school missed…**
  - 10 days = 28.7 points
  - 20 days = 57.4 points
  - 30 days = 86.1 points
- **LOSE 4.5 points off SAT score for each day of school missed…**
  - 10 days = 45 points
  - 20 days = 90 points
  - 30 days = 135 points

Inferential Statistics

Analysis & Findings for Research Question #5

And that's for athletes!!

Now imagine students who are NOT involved in extracurricular activities or don't have any sort of connection to school…

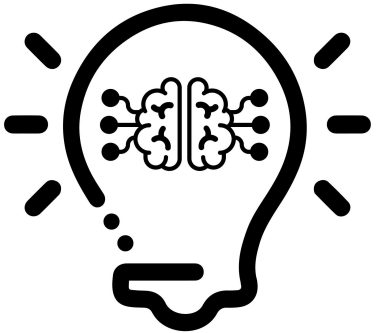


Significant Findings

Positive Academic Impact:

- Athletic participation positively correlates with strong academic performance and school attendance.

- Student-athletes showed strong scores on standardized tests:
  - PSAT average: 954.45 (SD = 155.74)
    i. *67th - 68th percentile range for a 9th grader!*
    ii. *56th - 60th percentile range for a 10th grader!*
  - SAT average: 1007.07 (SD = 160.97)
    i. *47th - 48th percentile!*



- Athletic involvement promotes discipline, time management, & accountability, aiding academic success.

Significant Findings

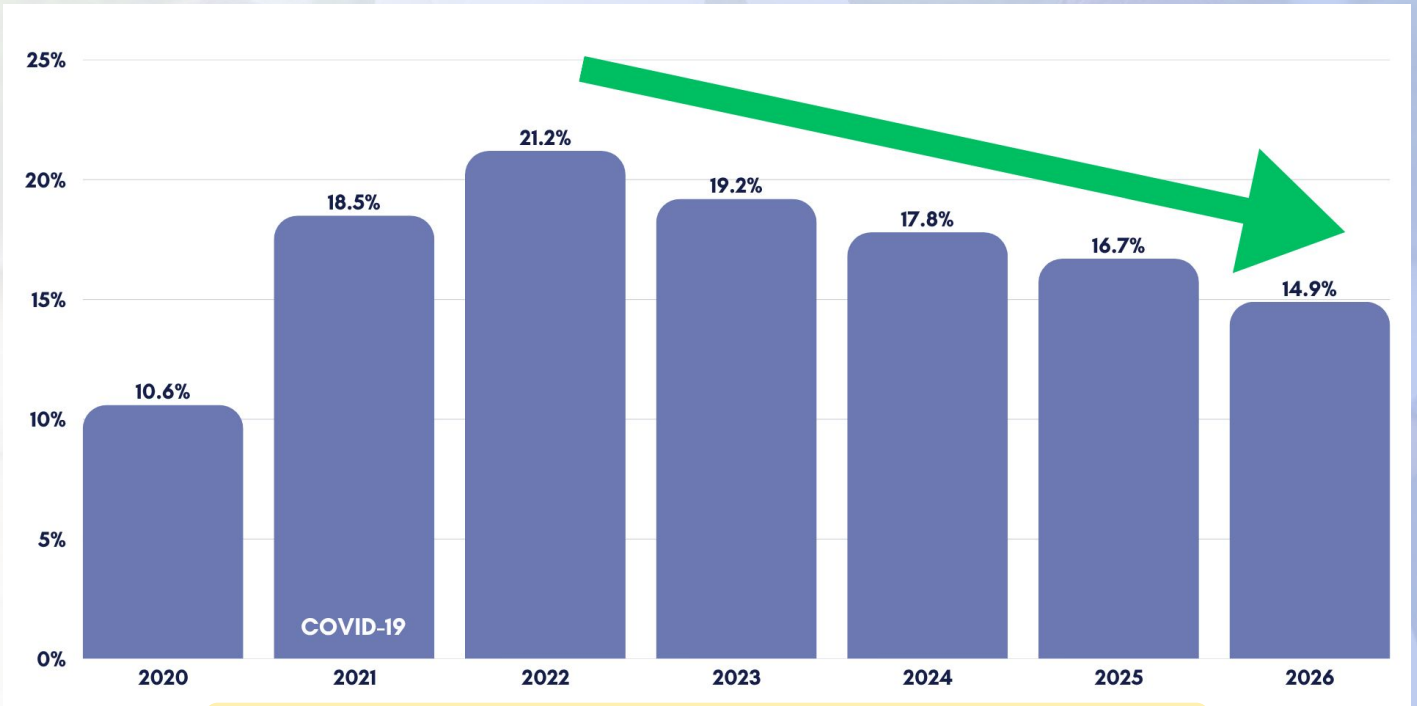
Attendance Benefits:

- Student-athletes had low absenteeism, averaging 7.52 days absent (SD = 6.90).
  - *Almost 1 in 5 students in Indiana is chronically absent, missing more than 18 days each year.*
  - *Data recently released was 14.9% of students.*



- High attendance may be driven by eligibility requirements and increased engagement with school.

CHRONIC ABSENTEEISM: STATEWIDE LONGITUDINAL COMPARISON

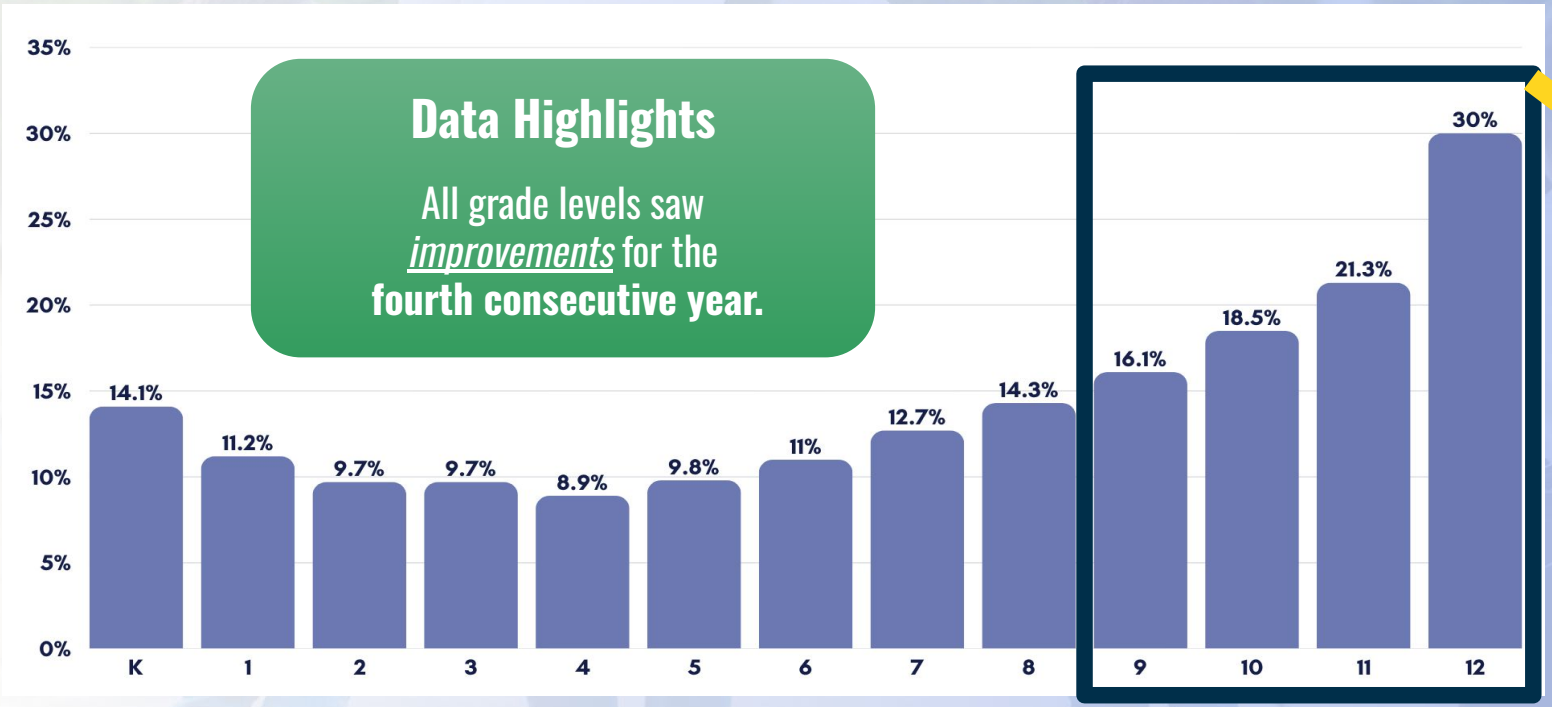


Nationally, chronic absenteeism rates remain at nearly 25%.

Data Highlights

Indiana's chronic absenteeism rate continues to move in the right direction, improving for **four consecutive years**. Statewide, chronic absenteeism has **improved 6.3 percentage points** since 2022.

CHRONIC ABSENTEEISM: BY GRADE LEVEL (2025-2026)



Data Highlights

All grade levels saw *improvements* for the **fourth consecutive year.**

Note: Rates of chronic absenteeism continue to be highest in grades 9-12, underscoring the urgency behind our ongoing work to rethink high school and better connect students to their unique future.

Significant Findings

School Connectedness:

- Participation in athletics increases students' sense of school community and belonging.
- This aligns with research showing a link between extracurriculars and school connectedness (Guest & Schneider, 2003).

Demographic Findings:

- **Gender:** Female athletes typically perform slightly better on some academic indicators, however, they are very similar in this study.
- **Ethnicity:** Underrepresented student-athletes showed strong academic outcomes, supporting the value of extracurriculars as a support structure (McNeal, 1999).
- **Grade Level:** Upperclassmen (grades 11–12) outperformed underclassmen (grades 9–10)

Implications

Supporting the purpose of education and the whole child!

- **Validation of the Research**
  - **Athletics are Essential to Schools**: Research validates that athletic participation enhances motivation, structure, identity, and purpose for students.
  - **Academic Benefits**: Clear links exist between athletics and attendance, test scores, and overall engagement.
  - **Employability & Soft Skills**: Athletics foster discipline, resilience, collaboration, and time management—skills highly valued by employers and aligned with employability frameworks.
  - **Behavioral & Social Impact**: Athletics provide mentorship, reduce risky behaviors, and foster positive relationships with trusted adults, enhancing academic and behavioral outcomes.

- **Resources Applicable to Schools**
  - **Coaches as Academic Influencers**: Coaches spend significant time with students and can be trained to support academics by recognizing warning signs, collaborating with teachers, and motivating success.
  - **Academic Support Structures**: Schools can embed mentoring, study tables, tutoring, and grade check-ins within athletic teams to connect athletics directly to academic achievement.
  - **Community & Family Engagement**: Athletic events provide opportunities to promote academics—through celebrations, resources, and partnerships between athletics and academics.
  - **Equitable Access**: Disparities in athletic opportunities persist, especially in rural and underfunded schools; expanding access ensures all students benefit from skill building and academic connections.

Implications

- **Future Implications & Innovation**
  - **College & Career Readiness**: Athletics spark postsecondary aspirations by exposing students to recruitment, college visits, and higher education opportunities.
  - **Promoting Diversity**: Teams unite students from varied backgrounds, promoting respect, empathy, and collaboration across differences.
  - **Technology Integration**: Tools like film review, analytics, and communication platforms enhance performance, build digital literacy, and strengthen feedback skills.
  - **Mental Health & Wellness**: Athletics can reduce stress but also create pressure; schools should embed wellness supports to foster balance, resilience, and self-care.
- **Call to Action**
  - **Reframing the Narrative**: Athletics should not be viewed as competing with academics but as a driver of academic development and success.
  - **Long-Term Impact**: Future research should examine how athletic participation influences college enrollment, degree attainment, and career advancement.
  - **Core Educational Strategy**: This study reinforces athletics as a key tool for improving student outcomes and overall school culture.
  - **Student Growth & Belonging**: Athletics foster resilience, achievement, and connection when students are challenged and supported by caring adults.

Recommendations for Further Research

Scope Expansion: Future studies could include multiple states to examine differences in educational policy, access, and outcomes related to athletics.

Student Perspectives: Incorporating surveys could reveal how students view athletics' impact on motivation, time management, and engagement.

School Personnel Perspectives: Interviews with athletic directors, counselors, principals, and coaches could highlight program structures and support systems.

Longitudinal Research: Tracking students after graduation would show whether high school athletic participation influences college success and career readiness.

Questions?
Comments?
Feedback?



